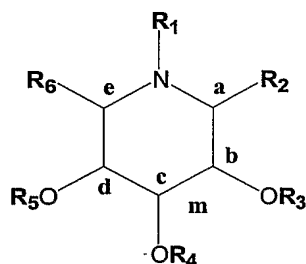


Claims

1. Deoxynojirimycin analogue, or a pharmaceutically acceptable salt thereof, having the general structure (I)

(I)



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wherein

R₁-R₅ each independently comprise H or (CH₂)_nCH₃ or X;

R₆ comprises H, CH₂OH or CH₂OX;

M is 0 or 1;

10 N is 0-9;

a, b, c, d, e are chiral centra having an R or S configuration;

and X comprises a large hydrophobic moiety and a spacer, whereby the hydrophobic moiety is linked through the spacer to the nitrogen atom or carbon atom concerned, and wherein the large hydrophobic moiety is derived from a polycyclic alcohol containing three or more rings each sharing two or more carbon atoms with another ring and is capable of inserting in lipid bilayers.

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2. Deoxynojirimycin analogue, or a pharmaceutically acceptable salt thereof, according to claim 1, wherein the large hydrophobic moiety is linked to said nitrogen atom of the deoxynojirimycin by means of a spacer comprising an alkoxy polyalkylene or polyalkylene chain of from 3 to 8 carbon atoms.

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3. Deoxynojirimycin analogue, or a pharmaceutically acceptable salt thereof, according to claim 1 or 2, wherein the large hydrophobic moiety is derived from a compound selected from the group consisting of adamantanemethanol, cholesterol, β -cholestanol, adamantanol and 9-hydroxyphenanthrene.
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4. Deoxynojirimycin analogue, or a pharmaceutically acceptable salt thereof, according to any one of claims 1-3, having the ido-configuration.
5. Deoxynojirimycin analogue comprising ido-N-(5-adamantane-1-yl-methoxy-pentyl)deoxynojirimycin, or a pharmaceutically acceptable salt thereof.
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6. Deoxynojirimycin analogue according to any one of claims 1-5 for use in the treatment of a disease involving increased levels of glucosylceramide and glucosphingolipids.
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7. Deoxynojirimycin analogue according to any one of claims 1-5 for use in the treatment of a disease involving increased levels of glucosylceramide, glucosphingolipids and glucosidases.
- 20
8. Dexynojirimycin analogue according to claim 6 for use in the treatment of Gaucher disease.
9. Dexynojirimycin analogue according to claim 6 for use in the treatment of an inflammatory disease.
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10. Dexynojirimycin analogue according to claim 6 for use in the treatment of hyperpigmentation and/or inflammatory skin conditions.
11. Dexynojirimycin analogue according to claim 6 for use in the treatment of a fungal disease.
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12. Dexynojirimycin analogue according to claim 6 for use in the treatment of overweight and obesity.
- 5 13. Dexynojirimycin analogue according to claim 6 for use in the treatment of lysosomal storage disorders.
14. Dexynojirimycin analogue according to claim 6 for use in the treatment of melanoma and other tumors.
- 10 15. Dexynojirimycin analogue according to claim 6 for use in the treatment of a microbacterial infection.
- 15 16. Dexynojirimycin analogue according to claim 7 for use in the treatment of insulin resistance.
17. Pharmaceutical composition comprising a deoxynojirimycin analogue, or pharmaceutically acceptable salt thereof, according to any one of claims 1-5 and a pharmaceutically acceptable carrier.
- 20 18. Method of treatment of an individual suffering from a disease selected from the group consisting of insulin resistance, Gaucher disease, inflammatory diseases, hyperpigmentation and/or inflammatory skin conditions, overweight and obesity, lysosomal storage disorders, fungal diseases, melanoma and other tumors, and microbacterial infections, comprising administering to said
- 25 individual an effective amount of the pharmaceutical composition according to claim 17.